example, is provided with a display for displaying text information or graphic information, a speaker for generating sound, operating buttons or a touch panel for user input operation, and a microphone for receiving voice of a user, etc. Further, the HMI **42** forms a user input part for receiving user input from the user of the vehicle **1** through a user interface screen.

[0081] The water temperature sensor **43** is placed at the engine body **11** and detects the temperature of the cooling water (water temperature) cooling the engine body **11**. The water temperature sensor **43** is connected to the input port of the ECU **31**. The water temperature detected by the water temperature sensor **43** is input to the ECU **31**.

[0082] The positioning sensor **44** generates positional information showing the current location of the vehicle **1**. The positional information generated by the positioning sensor **44** is output to the ECU **31**. The positioning sensor **44** is, for example, a GPS (global positioning system) of a car navigation system set in the vehicle **1**.

[0083] Configuration of Battery

[0084] The battery **50** is configured to be able to supply electric power to the suction pump **22** and cooling part **23** of the CO_2 recovery device **20**, etc. Further, the battery **50** is configured to be able to be charged by output of the internal combustion engine **10**, etc.

[0085] Summary of Method of Recovery of CO_2

[0086] Below, the method of recovery of CO_2 according to the present embodiment will be explained.

[0087] The CO_2 recovery part **21** becomes exhaust resistance, therefore the suction pump **22** must be operated so as to make the exhaust gas flow into the CO_2 recovery part **21** in order to recover the CO_2 in the exhaust gas. Therefore, in the present embodiment, when using the CO_2 recovery device **20** to recover CO_2, the suction pump **22** is operated.

[0088] If the suction pump **22** is operated, part of the exhaust gas flowing through the exhaust pipe **13** flows into the communicating path **24**. In the present embodiment, if the suction pump **22** is operated, part of the exhaust gas flowing through the exhaust pipe **13** flows into the cooling part **23**. Note that, in the exhaust gas flowing through the exhaust pipe **13**, the exhaust gas which did not flow into the communicating path **24** flows through the exhaust pipe **13** as is, and is discharged to the atmosphere.

[0089] Further, as explained above, the exhaust gas discharged from the internal combustion engine **10** is a high temperature. On the other hand, the zeolite used as the CO_2 adsorbent of the CO_2 recovery part **21** makes the adsorbed CO_2 desorb when the temperature becomes high. Therefore, if high temperature exhaust gas flows as is into the CO_2 recovery part **21**, the CO_2 recovery part **21** becomes a high temperature. As a result, not only is CO_2 not recovered at the CO_2 recovery part **21**, but also CO_2 is desorbed from the CO_2 recovery part **21**. For this reason, in order for the CO_2 recovery part **21** to recover the CO_2 in the exhaust gas, it is necessary to cool the exhaust gas flowing into the CO_2 (or the CO_2 recovery part **21**) down to the temperature where CO_2 is adsorbed at the zeolite.

[0090] Therefore, in the present embodiment, the cooling part **23** is operated when the CO_2 recovery device **20** recovers the CO_2. If the cooling part **23** is operated, due to the operation of the suction pump **22**, the exhaust gas flowing into the cooling part **23** is cooled down to the target temperature. For example, if zeolite is used as the CO_2 adsorbent of the CO_2 recovery part **21** like in the present embodiment, the target temperature is set to a temperature where CO_2 is adsorbed at the zeolite (for example, an ordinary temperature of equal to or less than 30° C.). Therefore, the exhaust gas flowing into the cooling part **23** is cooled down to ordinary temperature or so, at the cooling part **23**. As a result, low temperature exhaust gas cooled down to ordinary temperature or so is made to flow to the CO_2 recovery part **21**. Due to this, the CO_2 recovery part **21** is kept from becoming a high temperature and the recovery ability of CO_2 at the CO_2 recovery part **21** is maintained.

[0091] If the exhaust gas cooled at the cooling part **23** flows through the communicating path **24** to the CO_2 recovery part **21**, the exhaust gas and the CO_2 adsorbent of the CO_2 recovery part **21** contact. As a result, CO_2 is removed from the exhaust gas by adsorption by the CO_2 recovery part **21**. The exhaust gas after CO_2 is removed by adsorption by the CO_2 recovery part **21** flows through the exhaust passage **25** and is discharged into the atmosphere.

[0092] Note that, in the present embodiment, the cooling part **23** is arranged at the upstream side of the CO_2 recovery part **21** in the direction of flow of the exhaust gas and lowers the temperature of the exhaust gas flowing into the CO_2 recovery part **21**. However, the cooling part **23** can be configured in another way if it can lower the temperature of the CO_2 recovery part **21**. Therefore, for example, the cooling part **23** may be configured to be arranged around the CO_2 recovery part **21** and directly cooling the CO_2 recovery part **21**.

[0093] Problems

[0094] In this regard, to operate the suction pump **22** and cooling part **23**, that is, to operate the CO_2 recovery device **20**, the electric power of the battery **50** is used.

[0095] On the other hand, as explained above, the battery **50** is charged, for example, by generation of power utilizing the output of the internal combustion engine **10**. Therefore, to charge the battery **50**, sometimes fuel is burned in the internal combustion engine **10** and accordingly, sometimes CO_2 is generated. Therefore, if consuming the electric power of the battery **50**, it can be considered that the CO_2 is discharged by a corresponding amount.

[0096] For this reason, if the CO_2 recovery device **20** is operated under poor efficiency of recovery of CO_2, sometimes a sufficient amount of recovery of CO_2 cannot be obtained with respect to the electric power of the battery **50** consumed by operation of the CO_2 recovery device **20**. Note that, the efficiency of recovery of CO_2 shows the ratio of the amount of recovery of CO_2 in the CO_2 recovery device **20** with respect to the electric power consumed by the battery **50**.

[0097] Control of Operation of CO_2 Recovery Device

[0098] Therefore, in the present embodiment, the control device **30** permits operation of the CO_2 recovery device **20** in the case where a high efficiency recovery condition, at which it is predicted that the efficiency of recovery of CO_2, showing the ratio of the amount of recovery of CO_2 in the CO_2 recovery device **20** with respect to the electric power consumed by the battery **50**, will become equal to or greater than a preset predetermined efficiency, is satisfied, and prohibits operation of the CO_2 recovery device **20** in the case where that high efficiency recovery condition is not satisfied. As a result, a CO_2 recovery device with a large amount of recovery of CO_2 with respect to the electric power of the battery consumed by the CO_2 recovery device (that is, with a high efficiency of recovery of CO_2) is provided.